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FOREST SERVICE
Intermountain Forest and Range Experiment Station
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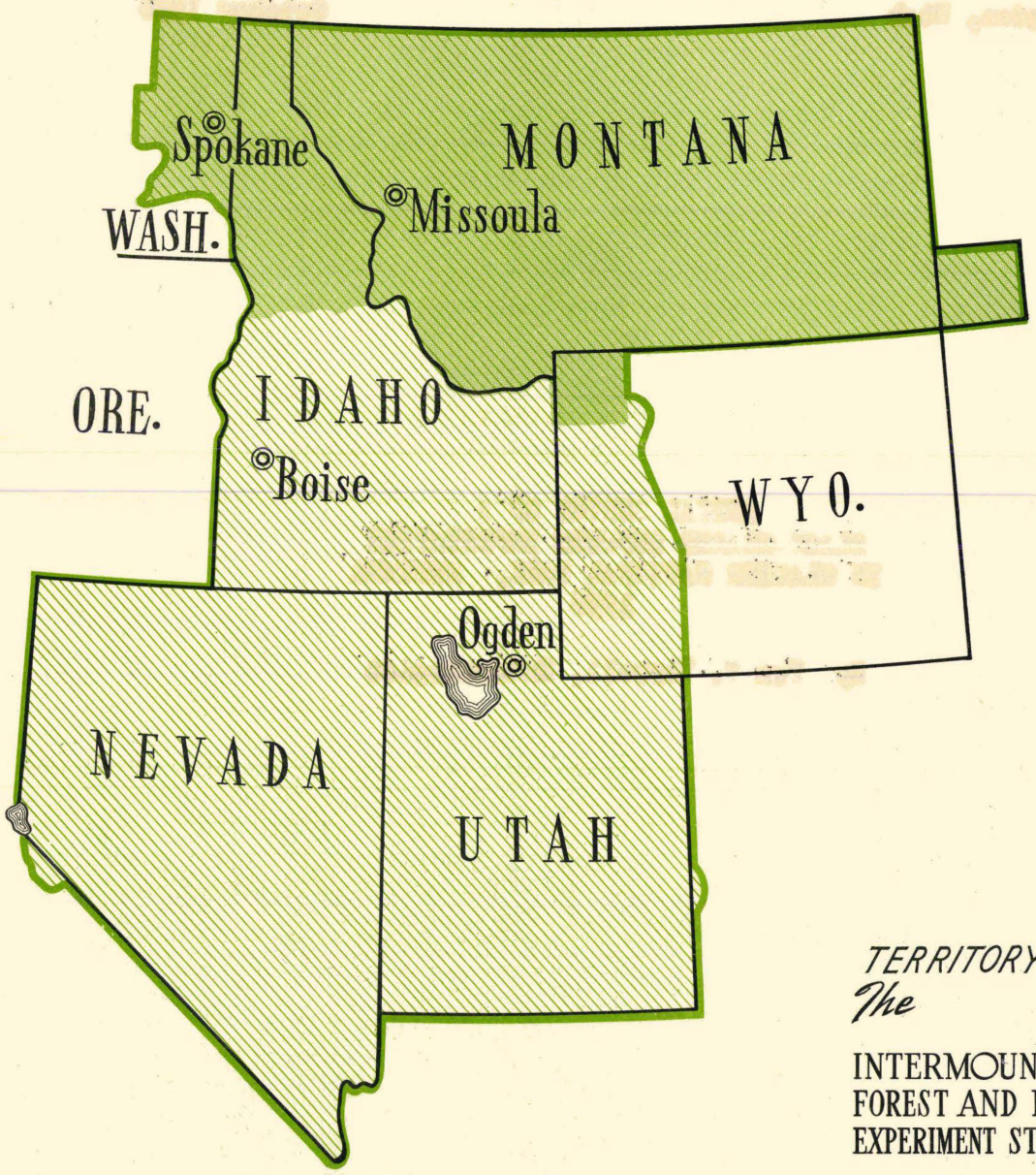
Ogden, Utah October 1956

AERIAL SURVEY OF A BLACK-HEADED BUDWORM INFESTATION IN GLACIER NATIONAL PARK, MONTANA 1956

By Tom T. Terrell, Entomologist

Prepared By The
Forest Insect Laboratory
Missoula, Montana

The AREA COVERED BY THIS REPORT



TERRITORY OF.. The

INTERMOUNTAIN FOREST AND RANGE EXPERIMENT STATION

The MISSOULA FOREST INSECT LABORATORY is a field unit of the Intermountain Forest and Range Experiment Station at Ogden, Utah. The Laboratory conducts forest insect research, surveys forest insect outbreaks, and gives technical advice on cooperative insect control programs in Montana, northwestern South Dakota, northwestern Wyoming, northern Idaho, and northeastern Washington.

The functions are conducted in the remaining station territory by staff entomologists at Ogden, and Boise, Idaho.

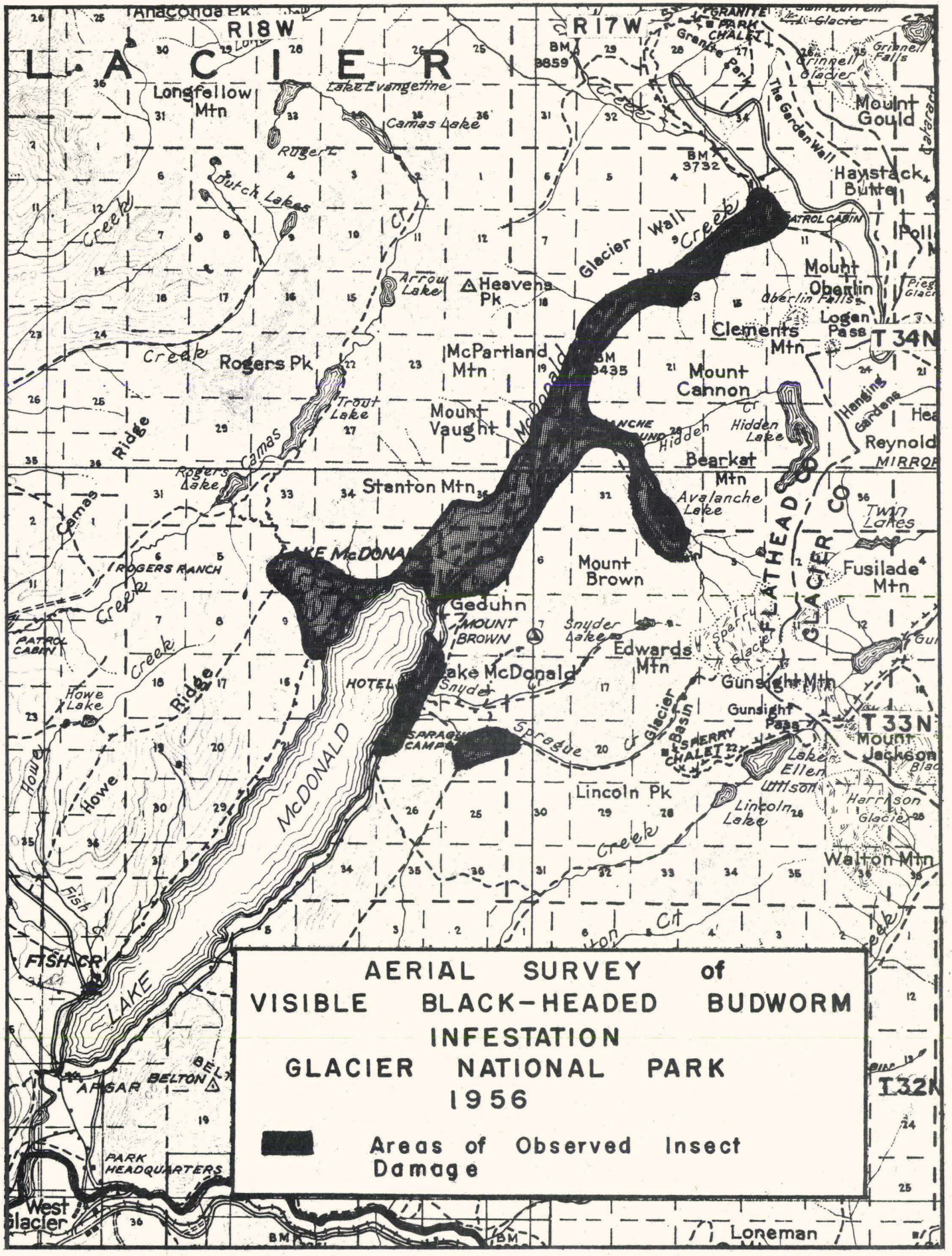
AERIAL SURVEY OF A BLACK-HEADED BUDWORM INFESTATION IN GLACIER NATIONAL PARK, MONTANA 1956

An outbreak of the black-headed budworm (Acleris variana (Fern.)) was first discovered and reported by Glacier National Park personnel during July, 1956 in the McDonald Creek drainage of the Park. Ground examinations of the infestation in mid-August by the Missoula Forest Insect Laboratory provided sufficient information to show that a serious infestation was prevalent over an extensive area in the drainage. The tree species attacked was primarily western hemlock although limited feeding was observed on spruce and true fir. The damage caused by the feeding budworm larvae was noticeably heavier in the upper two-thirds of the tree crowns. At the time of the observation, the insects had started to pupate and both pupal and larval stages were present in considerable numbers. Old, as well as current, foliage had been fed upon and masses of the chewed needles hung to the twigs by webbing. These dead, partially consumed needles gave the trees a characteristic rusty-brown color.

On August 31, 1956 an aerial survey was made in several drainages along the west side of the Park to determine the extent of the budworm infestation. The attached map shows that the area of visible damage, as mapped from the air, covers an estimated 5,200 acres.

The evidence of the outbreak was easily seen from the air. It was characterized by a rusty-brown foliage discoloration that appeared to spread over the entire upper portion of the tree crowns. As viewed from the air, the foliage damage seemed to be confined to mature forest types where hemlock predominated. It is possible that some extension of budworm infestation occurred along the margins of the observed damage where the insect activity could be on understory trees or where the evidence of infestation was too light to be visible from a plane.

Survey flights were also made in the drainages to the north and south of McDonald Creek. No evidence of the outbreak was observed in these drainages.


GLACIER
R18W
R17W
Anaconda Pk
Longfellow Mtn
Lake Evangeline
Camas Lake
Rugel L
Dutch Lakes
Arrow Lake
Heavens Pk
Rogers Pk
McPartland Mtn
Trout Lake
Mount Vaught
Stanton Mtn
Rogers Lake
Camas Ridge
Camas Creek
Lake McDonald
ROGERS RANCH
PATROL CABIN
Howe Lake
Howe Ridge
Howe Creek
HOTEL
Geduhn
MOUNT BROWN
Snyder Lake
Snyder Cr
Sprague Cr
McDONALD
Fish Cr
FISH CR
LAKE
AHSAR
BELTON
PARK HEADQUARTERS
West Glacier
Granite Park
CHALET
Granite Park Glacier
Grinnell Glacier
Grinnell Falls
The Garden Wall
Mount Gould
Haystack Butte
Glacier Wall
Wall Creek
Mount Oberlin
Oberlin Falls
Logan Pass
Clements Mtn
T 34N
Mount Cannon
Hidden Lake
Hidden Cr
Hanging Gardens
Bearhat Mtn
Avalanche Lake
Avalanche Cr
Reynolds
MIRROR
GREAT NORTHERN RAILWAY CO
Twin Lakes
Fusilade Mtn
Mount Brown
Edwards Mtn
Sperry Glacier
Gunsight Mtn
Gunsight Pass
Gunsight Cr
Glacier Basin
SPERRY CHALET
Lake Ellen Wilson
Mount Jackson
T 33N
Lincoln Pk
Lincoln Lake
Harrison Glacier
Walton Mtn
Loneman
AERIAL SURVEY of
VISIBLE BLACK-HEADED BUDWORM
INFESTATION
GLACIER NATIONAL PARK
1956
Areas of Observed Insect Damage